ers limit available diffusion paths to shorten a length of a conduction channel formed in said epitaxial deposited semiconductor layer.

18. The method according to claim **16**, wherein said plurality of trenches are etched to a given depth such that a depletion region between said epitaxial deposited semiconductor layer implanted with said second type of dopant and said epitaxial deposited semiconductor layer not implanted with said second type of dopant is separated from a Schottky barrier between said epitaxial deposited semiconductor layer and said first metal layer.

19. The method according to claim **16**, further comprising depositing a second metal layer on said substrate opposite said epitaxial deposited semiconductor layer.

20. The method according to claim **19**, further comprising etching said semiconductor substrate to form a plurality of grooves before depositing said second metal layer.

21. The method according to claim **1**, wherein:

said first type of dopant is boron; and

said second type of dopant is phosphorous or arsenic.

22. The method according to claim **16**, wherein:

said first type of dopant is boron; and

said second type of dopant is phosphorous or arsenic.

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